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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,519	08/01/2003	Youssri Helmy	3442.1002-000	4346
21005	7590	06/15/2005		
HAMILTON, BROOK, SMITH & REYNOLDS, P.C. 530 VIRGINIA ROAD P.O. BOX 9133 CONCORD, MA 01742-9133			EXAMINER ELALLAM, AHMED	
			ART UNIT 2662	PAPER NUMBER

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/632,519

Applicant(s)

HELMY ET AL.

Examiner

AHMED ELALLAM

Art Unit

2662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 01/21/05; 01/31/05.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Specification***

1. The disclosure is objected to because of the following informalities:  
  
On page 10, lines 21-22, the phrase "the result the first step" need correction.  
  
Appropriate correction is required.

### ***Claim Objections***

2. Claims 1-3 are objected to because of the following informalities:  
  
In claim 1, line 14, the phrase "a remote network" must refer to its antecedent.  
  
Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 2 and 6-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Bartlett et al, US 2003/0177396 A1.

Regarding claim 1, with reference to figures 1, 5, 6 and 7, Bartlett discloses a method for handling packet traffic in a data network comprising:

routing outgoing network layer packet traffic to a local network Performance Enhancing Proxying (PEP) peer (101 as in figure 1, and 701 as in figure 7) associated

with a host 719 ( the host is the claimed selected source node) see figure 7, (claimed routing outgoing network layer packet traffic associated with a network layer connection from a selected source node to a local network accelerator associated with a node which is a source of the packet traffic network, the local accelerator running a proxy application); Bartlett also discloses intercepting the packet traffic, see [0066], and multiple TCP connections are multiplexed onto and carried by a single backbone (claimed physical layer persistent connection) to a remote PEP peer (107 as in figure 1, and 705 as in figure 7) , see paragraphs,[0065], [0098] and [0099], (claimed opening two or more transport layer sessions over at least one persistent physical layer connection between the local network accelerator and at least one remote network accelerator); (Examiner, in accordance with the specification, interpreted the multiple TCP connections that are multiplexed and carried by a single backbone connection to a remote PEP peer for carrying the packet traffic from a source host to a destination host, as been the claimed transmitting processed packet traffic to a remote network accelerator associated with a destination node which is a destination of the packet traffic via the two or more transport layer connections). See paragraph [0129].

Regarding claim 2, Bartlett discloses that the PEPs (proxying) consist of a priority kernel 517 (unit 517, figure 5), the priority kernel is used to control the available backbone capacity for different priority levels, the kernel uses the criteria comprising source IP, source port number TCP port number, UDP port numbers, etc.. see paragraph [0104]. (Claimed a proxy to proxy protocol is employed to specify at least an original transport protocol identifier, original address, and original ports of the nodes).

Regarding claims 6 and 12, with reference to figure 5, Bartlett discloses a PEP (Performance Enhancing Proxying) device (claimed data network routing device) comprising:

Router module 505 connected to receive incoming packet from a source node (example: host 301, fig. 3); Burnett discloses that the packet are IP packet that are routed in accordance with respective IP addresses, See paragraph [0144]; (Examiner interpreted the IP routing of Burnett, using the routing module 505, as the claimed router examining the incoming packets to determine if they are addressed to a destination which is not local to the router);

A TCP spoofing kernel 513 that locally acknowledge data segments (packets) received from host (301), (claimed socket interface), see paragraph [0098];

Backbone protocol kernel 515 in combination with data compression Kernel 521 (claimed proxy application), the Backbone protocol kernel 515 is used for the multiplexing of multiple TCP connections (claimed multiple transport layer connections) carried onto a single backbone connection (claimed at least one physical layer connection), see paragraph [0099]. (Claimed a proxy application, connected to receive incoming traffic from the socket interface, the proxy application associated with the router (module), and the proxy application , acting as a proxy for the source node, and establishing multiple transport layer connection, the multiple transport layer connections capable of carrying packets to a destination node in parallel).

Regarding claim 7, Bartlett discloses that the PEP 101 and its peer PEP 107 of figure 6, wherein PEP 101 receives packets from a remote host, see paragraph [0122].

(Examiner interpreted the identical PEPs (figure 6) interfacing each LAN as having the characteristic of transmitting and receiving traffic across the backbone connection as being the "claimed proxy application additionally receives packets from a network connection addressed to a destination node which is local to the router").

Regarding claim 8, Bartlett further discloses having data compression Kernel 521 for compressing data prior to transmission across the backbone link [0101], (Examiner notes that by way of symmetry, compressed data when received by the PEP, it must be decompressed so it can be delivered to the destination host). (Claimed packets are compressed by the proxy application, and additionally comprising a data decompressor, for decompressing received packet, and the router forwards decompressed packets to the destination node).

Regarding claim 9, Bartlett discloses that data from a sending host is transmitted over multiple TCP connections that are multiplexed onto a backbone connection between peers PEPs 101 and 107. See paragraph [0111]. (Claimed at least one transport layer sessions are carried over a persistent connection established with another data network routing device having a proxy application running thereon), (Examiner interpreted the PEP 107 as the claimed "another data network routing device having a proxy application thereon", since it has similar components and provides functionalities similar to that of PEP 101).

Regarding claim 10, Bartlett discloses establishing a backbone connection between the two proxying devices (PEP, each proxying device has a proxy application, as indicated above with reference to claim 9, each using a spoofing kernel. See

paragraph [0111]. (Claimed a proxy-to-proxy protocol is used to pass original source node and destination node information).

Regarding claim 11, Bartlett discloses a priority Kernel 517 within the PEP 101 (proxying peer) for controlling the available backbone capacity for different priority levels, the kernel 517 uses the criteria comprising source IP, source port number TCP port number, UDP port numbers, etc.. See paragraph [0104]. (Claimed a proxy-to-proxy protocol specifies an original type for the packets).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bartlett in view of Dillon et al, US 6,658,463).

Regarding claims 3-4, Bartlett while discloses using a compression kernel at each PEP (Performance Enhancing Proxying peer), see paragraph [0011], it doesn't specify that the compression is a dictionary based compression algorithm (as in claim 3) and the coding is a Huffman coding (as in claim 4).

However, Dillon discloses in the same field of endeavor, using a dictionary based compression algorithm for decoding data before transmission (as in claim 3) and the

coding is a Huffman coding (as in claim 4). See column 14, lines 56-67 and column 15 – column 16, lines 57.

Therefore, it would have been obvious to an ordinary person of skill in the art, at the time the invention was made to implement the dictionary based compression algorithm using Huffman coding as taught by Dillon as the compression kernel of Bartlett so that less computational resources can be used (column 15, line 15-22). The advantage in Bartlett's system would have efficient use of the available bandwidth due to the composite benefit of compressing data with a minimized computational time.

Regarding claim 5, Bartlett does not disclose a dictionary associated with an existing end-to-end connection is utilized to service a new connection request.

However, Dillon discloses that a dictionary is used to provide high compression should data similar to earlier previously transferred data be submitted for compression. See column 15, lines 35-48. (Claimed a dictionary associated with an existing end-to-end connection is utilized to service a new connection request).

Therefore, it would have been obvious to an ordinary person of skill in the art, at the time the invention was made to use Dillon's end-to-end associated dictionaries in establishing Bartlett new connection so that prior to transmission of data, compression would be much faster if the data is similar in content to other data previously transmitted. (Dillon, column 15, lines 40-48). The advantage in Bartlett's system would be efficient use of the available bandwidth due to the composite benefit of high compression of data due to a minimized computational time, and the efficient use of the available backbone capacity due to the compression benefit.



### ***Response to Arguments***

5. Applicant's arguments filed January 21, 2005 have been fully considered but they are not persuasive:

The rejections under 112 2<sup>nd</sup> have been withdrawn in view of Applicants' argument.

#### **Claim rejections:**

Examiner noted Applicants argument with reference to the differences between the prior art of Barlett and Applicants' invention. Applicant assert that Barlett teaching is different from the Applicants invention in two distinguishing feature, the first feature is that Applicants *"terminates the TCP connection on an end to end basis"*, while *Barlett uses TCP spoofing kernel 513 that locally acknowledge TCP packets. In other words, the present invention does not spoof TCP connections, it opens them end to end, requiring TCP layer acknowledgment from the far end.* (Emphasis added); the second feature is *"involving breaking up a single network layer connection across multiple TCP connections"*. Applicant assert that Barlett merely provide multiple TCP connections over a single (physical layer) connection.

The argument with regard to spoofing, while is not related to the claimed subject matter, Examiner notes that, in contrast to Applicants assertion that the use of spoofing by Barlett is similar to that of Applicant. The specification discloses spoofing in order to increase the throughput by fooling the source node. See for example, specification page 5, lines 1-4, and page 7, lines 7-10, and lines 22-27. Examiner asserts that the

spoofing of Barlett is substantially similar to that of Applicant, because it provides the same functionality of the spoofing by the PEP (Performance Enhancing Proxying).

Applicants argue that the claimed "two or more transport layer connections" for a given "network layer connection" is not taught by Barlett. Examiner respectfully disagrees, for example Barlett describes receiving local IP packets at PEP (Performance Enhancing Proxying), which packets are exchanged with the TCP spoofing Kernel, see paragraph [0122]. The IP packet is a network layer connection packet, and since packet belonging to the same host source, they can be interpreted as being the claimed *one network layer connection*, because all the packets from the initiating client intended for the same destination have the same IP parameters, and therefore belong to the same (one) network layer connection. In addition, the spoofing of Barlett is used to send local acknowledgment to the source host so that multiple available TCP connections can be used in carrying the IP packets belonging to the source host/or client. Similarly, Barlett discloses that packet flows from the same source are multiplexed over an established connection, (see claim 8). The established connection over the backbone, while it is a physical layer connection, it also comprises multiple TCP connections that are multiplexed onto and carried by a single backbone connection, see [0099].

Examiner believes, given the broadest reasonable interpretation of the claim limitations, the rejection above is proper.

***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

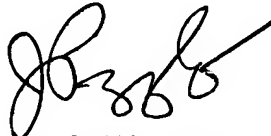
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **AHMED ELALLAM** whose telephone number is (571) 272-3097. The examiner can normally be reached on 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kizou Hassan can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AHMED ELALLAM  
Examiner  
Art Unit 2662  
June 10, 2005



JOHN PEZZLO  
PRIMARY EXAMINER